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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/664,395	09/18/2003	Torrey M. Bievenour	VQL-P-P6	4441
44702	7590	10/28/2005	EXAMINER	
OSTRAGER CHONG FLAHERTY & BROITMAN PC 250 PARK AVENUE, SUITE 825 NEW YORK, NY 10177			LAVARIAS, ARNEL C	
			ART UNIT	PAPER NUMBER
			2872	

DATE MAILED: 10/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/664,395	Applicant(s) BIEVENOUR ET AL.	
	Examiner Arnel C. Lavarias	Art Unit 2872	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 August 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2 and 4-41 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 7,19-22 and 35-39 is/are allowed.
- 6) ☒ Claim(s) 1,2,4-6,8,11,12,14-18,23-28,31,40 and 41 is/are rejected.
- 7) ☒ Claim(s) 9,10,13,29,30 and 32-34 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 August 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. The replacement drawings were received on 8/17/05. These drawings are acceptable.

Response to Amendment

2. The amendments to the abstract and specification of the disclosure in the submission dated 8/17/05 are acknowledged and accepted. In view of these amendments, the objections to the specification in Sections 3-4 of the Office Action dated 2/15/05 are respectfully withdrawn.
3. The amendments to Claims 1, 4-5, 7, 9-10, 13, 17, 19, 23, 25-27, 29-31 in the submission dated 8/17/05 are acknowledged and accepted.
4. The cancellation of Claim 3 in the submission dated 8/17/05 is acknowledged and accepted.
5. The addition of Claims 32-41 in the submission dated 8/17/05 is acknowledged and accepted.

Response to Arguments

6. The Applicants' arguments filed 8/17/05 have been fully considered but they are not persuasive.
7. The Applicants argue that, with respect to newly amended Claims 1, 23, 25-27, Shanks fails to teach or reasonably suggest the optically active device comprising a

material that is optically active and a liquid. The Examiner respectfully disagrees. The Examiner refers the Applicants to Pages 223-235 of Saleh et al. (B. E. A. Saleh, M. C. Teich, "Fundamentals of Photonics", John Wiley & Sons, New York, 1991, pp. 223-235.), which specifically discloses that the liquid crystal materials utilized by Shanks is optically active. Additionally, Applicants' assertion, as well as Shanks' disclosure, that the rotational effect of the liquid crystal cell is independent of the incident wavelength (See col. 4, lines 9-12 of Shanks; See Page 15-16 of Applicants' submission dated 8/17/05) of light is incorrect, since the optical retardation (i.e. rotation) of the incident light passing through the liquid crystal cell depends on wavelength, as well as both the extraordinary and ordinary refractive indices of the liquid crystal, each of which are also dependent on wavelength. The Examiner also notes that certain features upon which applicant relies (i.e., the production of color from optically active liquids vs. birefringent materials; the optically active liquid not having an optical axis vs. having an optical axis) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

8. The Applicants similarly argue that, with respect to newly amended Claim 17, Reznik et al. fails to teach or reasonably suggest the optically active device comprising a material that is optically active and a liquid. The Examiner respectfully disagrees. After reviewing the Reznik et al. reference, the Examiner notes that Reznik et al. additionally discloses the use of a liquid crystal cell in the device (See specifically 406 in Figure 4; col. 5, line 35-col. 6, line 16), which rotates the polarization of incident light.

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9. Claims 1-2, 4-6, 8, 11-12, 14-18, 23-28, 31, 40-41 are now rejected as follows.

Claim Rejections - 35 USC § 112

10. Claim 40 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claim 40 recites the limitation of adjusting the adjustable polarizer until maximum extinction is reached. However, the specification of the disclosure fails to disclose that one must adjust the adjustable polarizer of the color filter until maximum extinction is reached. Page 8, lines 6-9 of the specification only discloses adjusting the color filter to the point of greatest extinction, then setting this position as the baseline.

Claim Rejections - 35 USC § 102

11. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

12. Claims 1-2, 6, 12, 23, 25-28 are rejected under 35 U.S.C. 102(b) as being anticipated by Shanks (U.S. Patent No. 4232948), of record.

Shanks discloses an optically active color filter (See for example Figure 1), comprising a rotatable, linear polarizer for polarizing light from a light source (See 1 in Figure 1; col. 2, lines 52-68); an optically active device for rotating the polarized light from the polarizer, the optically active device comprising an optically active liquid (See 3 in Figure 1; col. 2, lines 8-46; it is noted that the liquid crystal used in the liquid crystal cell inherently is optically active); and an adjustable polarizer for selecting a desired color from the rotated polarized light from the optically active device (See 11 in Figure 1; col. 3, lines 10-28). Shanks additionally discloses that the linear polarizer may be a fixed-position linear polarizer (See col. 2, lines 8-68); the adjustable polarizer may be a first rotatable polarizer (See col. 3, lines 10-28); the optical activity of the optically active device is electrically controlled (See 3 in Figure 1; col. 2, line 8-col. 4, line 30); and one or both polarizers may be rotated through 180 degrees to generally provide a continually varying series of colors in the output (See col. 3, lines 10-28). Shanks further discloses a method for producing a colored light (See for example Figure 1), the method comprising polarizing light from a light source (See 1 in Figure 1; col. 2, lines 52-68); rotating the polarized light through an optically active substance (See 3 in Figure 1; col. 2, lines 8-46), such as liquid crystal (See 3, 6 in Figure 1); and selecting a desired color from the rotated polarized light by passing the rotated polarized through an adjustable polarizer (See 11 in Figure 1; col. 3, lines 10-28).

13. Claims 17-18 are rejected under 35 U.S.C. 102(b) as being anticipated by Reznik et al. (U.S. Patent No. 5442468), of record.

Reznik et al. discloses an optical active color filter (See for example Figures 3-4) comprising a first linear polarizer for polarizing light from the light source (See 400, 402, 404 in Figure 4); an optical active device for rotating the polarized light from the linear polarizer, the optically active device comprising an optically active liquid (See 406 in Figure 4; it is noted that the liquid crystal used in the liquid crystal cell inherently is optically active); and an electrically controlled polarizing assembly for selecting a desired color from the rotated polarized light from the optically active device (See 407, 409, 410 in Figure 4); the polarizing assembly comprising a voltage-controlled liquid crystal panel (See 409 in Figure 4) and a second linear polarizer (See 407, 410 in Figure 4).

Claim Rejections - 35 USC § 103

14. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

15. Claims 4-5, 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shanks.

Shanks discloses the invention as set forth above in Claims 1, 27, except for the optically active liquid comprising corn syrup or a sucrose solution. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the optically active liquid comprise corn syrup or a sucrose solution, since it has been held to be within the ordinary skill of worker in the art to select a known material on the basis of its suitability of the intended use. One would have been motivated to have the

optically active liquid comprise corn syrup or a sucrose solution, since such materials are well known, optically active materials that are widely available and inexpensive, and additionally do not require an external voltage or current to operate. *Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327, 65 USPQ 297 (1945).

16. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shanks in view of Reznik et al.

Shanks discloses the invention as set forth above in Claims 1 and 6. Shanks lacks the color filter including a second rotatable polarizer disposed between the light source and linear polarizer. However, Reznik et al. teaches an apparatus for producing color effects (See for example Figures 1-4), wherein additional polarizers are utilized to control the color and brightness of the output light, and that such polarizers are similarly rotatable (See 402, 407, 410 in Figure 4; col. 2, line 57-col. 3, line 38; col. 5, line 35-col. 6, line 16). The polarizers are placed such that two polarizers may be located prior to an optically active device (See for example 402, 407 in Figure 4). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have the color filter include a second rotatable polarizer disposed between the light source and linear polarizer, as taught by Reznik et al., in the filter of Shanks, to provide adjustment of color over the entire visible spectrum range available to the optically active device.

17. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shanks in view of Kiss (WO02/082169 A1).

Shanks discloses the invention as set forth above in Claim 1, except for at least one element thereof being removable. However, Kiss teaches an apparatus for producing color effects (See for example Figures 1-6), wherein at least one element in the device (See for example 5, 1, 2 in Figure 6; Page 14) may be removable. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have at least one element thereof be removable, as taught by Kiss, in the color filter of Shanks, to simplify replacement of the various elements.

18. Claims 14-16, 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shanks in view of Carmichael et al. (WO01/50187 A1), of record.

Shanks discloses the invention as set forth above in Claims 1, 23, except for the color filter being controlled by an electronic wireless remote control device. However, Carmichael et al. teaches a tunable liquid crystal optical filter for producing various color effects (See for example Figure 3-8, 18-19), wherein the various liquid crystal panels in the color filter are controlled by a receiver detecting signals from a remote transmitter (See 28, 1 in Figures 18-19; Page 15, lines 11-37). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have the color filter of Shanks, be controlled by an electronic wireless remote control device, as taught by Carmichael et al., to reduce the size of the filter and system to which the filter is attached, thus allowing the apparatus to be self-contained.

19. Claim 41 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shanks in view of Carmichael et al.

Shanks discloses the invention as set forth above in Claim 1, except for the optical active color filter mounted inside an image projector. However, Carmichael et al. teaches a tunable liquid crystal optical filter for producing various color effects (See for example Figure 3-8, 18-19), wherein such optical filters may be utilized with image projection systems, such as overhead projectors and luminaries (See Figures 7-8; Pages 12-14). Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have the optical active color filter of Shanks be mounted inside an image projector, as taught by Carmichael et al., for the purpose of providing color and enhancing brightness at low cost and little added manufacturing complexity.

Allowable Subject Matter

20. Claims 7, 19-22, 35-39 are allowed.
21. Claims 9-10, 13, 29-30, 32-34 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
22. The following is a statement of reasons for the indication of allowable subject matter:

Claim 19 is allowable over the cited art of record for at least the reason as previously set forth in Section 18 of the Office Action dated 2/15/05. Claims 20-22, 35-39 are dependent on Claim 19, and hence are allowable for at least the same reasons Claim 19 is allowable.

Claim 7 is allowable over the cited art of record for at least the reason that the cited art of record fails to teach or reasonably suggest an optically active color filter, as generally

set forth in Claim 7, the filter including, in combination with the features recited in Claim 7, the first rotatable polarizer being circular shaped and having a cutout, wherein the first rotatable polarizer is disposed offset from a path of the rotated polarized light from the optically active device, and further wherein the radius of the first rotatable polarizer extends beyond the light path.

Claim 32 is allowable over the cited art of record for at least the reason that the cited art of record fails to teach an optically active color filter, as generally set forth in Claims 1, 6, 32, the color filter including, in combination with the features recited in Claim 1, 6, 32, the color from the first rotatable polarizer having only one peak wavelength in the visible light spectrum and further, wherein the peak wavelength stays in the visible light spectrum for at least 90 degrees of rotation of the first rotatable polarizer.

Claim 9 is allowable over the cited art of record for at least the reason that the cited art of record fails to teach an optically active color filter, as generally set forth in Claims 1, 9, the color filter including, in combination with the features recited in Claim 1, 9, the optically active device further comprising an adjustable thickness container holding the optically active liquid and further, wherein the thickness of the optically active device is changed by adjusting the container. Claims 33-34 are dependent on Claim 9, and hence are allowable for at least the same reasons Claim 9 is allowable.

Claim 10 is allowable over the cited art of record for at least the reason that the cited art of record fails to teach an optically active color filter, as generally set forth in Claims 1, 10, the color filter including, in combination with the features recited in Claim 1, 10,

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the optically active device comprising a multiplicity of removable layers of optically active liquid.

Claim 13 is allowable over the cited art of record for at least the reason that the cited art of record fails to teach an optically active color filter, as generally set forth in Claims 1, 13, the color filter including, in combination with the features recited in Claim 1, 13, the thickness of the optically active liquid is not uniform such that all polarized light from the light source travels the same distance through the optically active liquid.

Claim 29 is allowable over the cited art of record for at least the reason that the cited art of record fails to teach a method for producing a colored light, as generally set forth in Claims 27, 29, the method including, in combination with the features recited in Claim 27, 29, the step of adjusting the thickness of the optically active liquid.

Claim 30 is allowable over the cited art of record for at least the reason that the cited art of record fails to teach a method for producing a colored light, as generally set forth in Claims 27, 30, the method including, in combination with the features recited in Claim 27, 30, the thickness of the optically active liquid not being uniform such that all polarized light from the light source travels the same distance through the optically active liquid.

Conclusion

23. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

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Saleh et al. (B. E. A. Saleh, M. C. Teich, "Fundamentals of Photonics", John Wiley & Sons, New York, 1991, pp. 223-235.).

Saleh et al. is being cited to provide additional information regarding optical activity and liquid crystals.

24. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

25. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Arnel C. Lavarias whose telephone number is 571-272-2315. The examiner can normally be reached on M-F 9:30 AM - 6 PM EST.

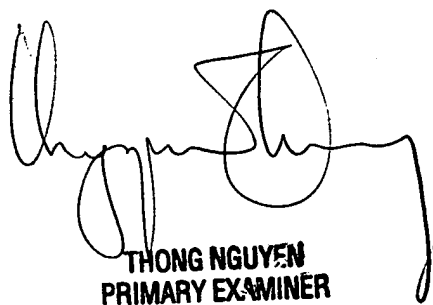
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew Dunn can be reached on 571-272-2312. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Arnel C. Lavarias
10/25/05



**THONG NGUYEN
PRIMARY EXAMINER
GROUP 2800**

Drawing Changes
Approved
for
10/24/05

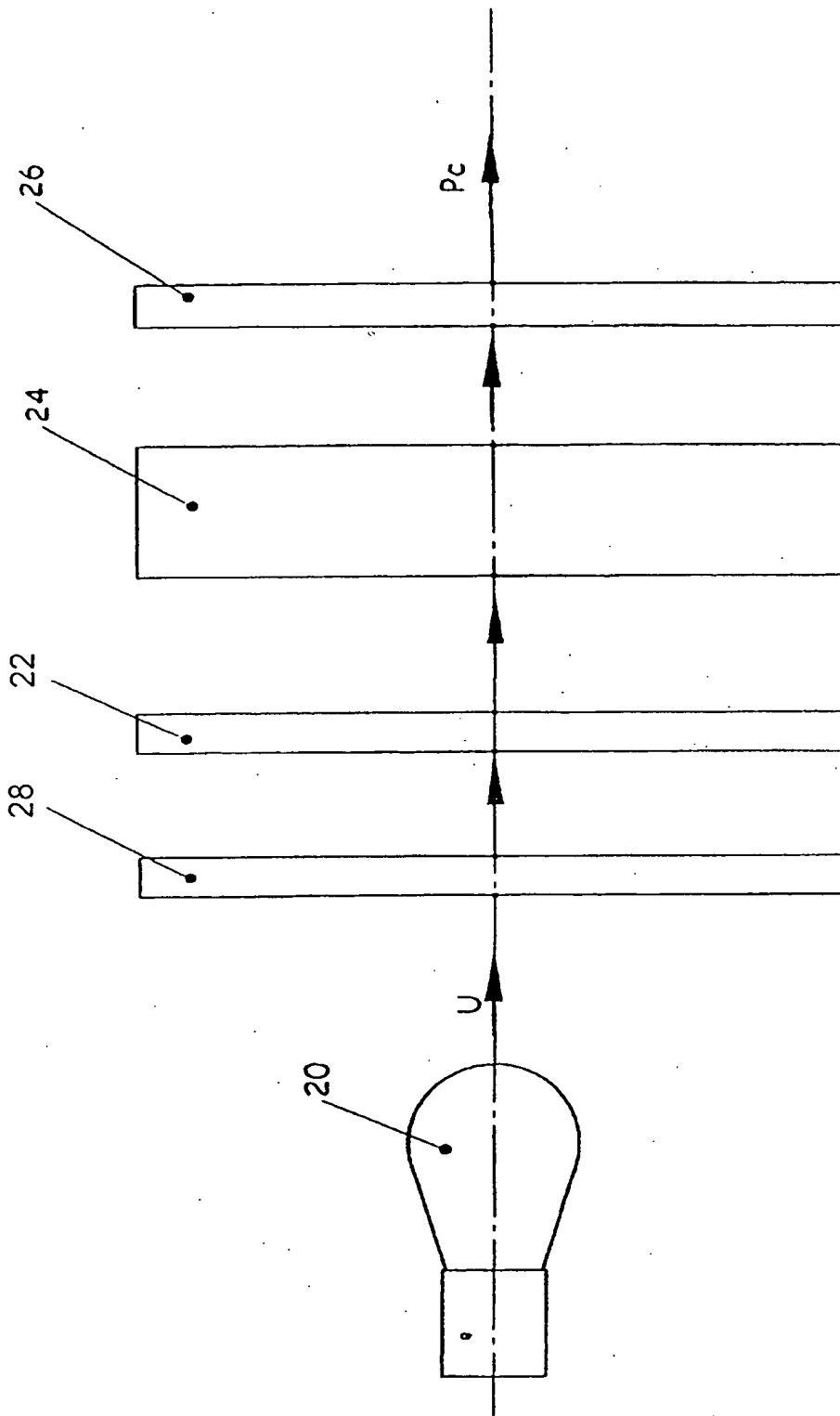


FIG. 2



10/17

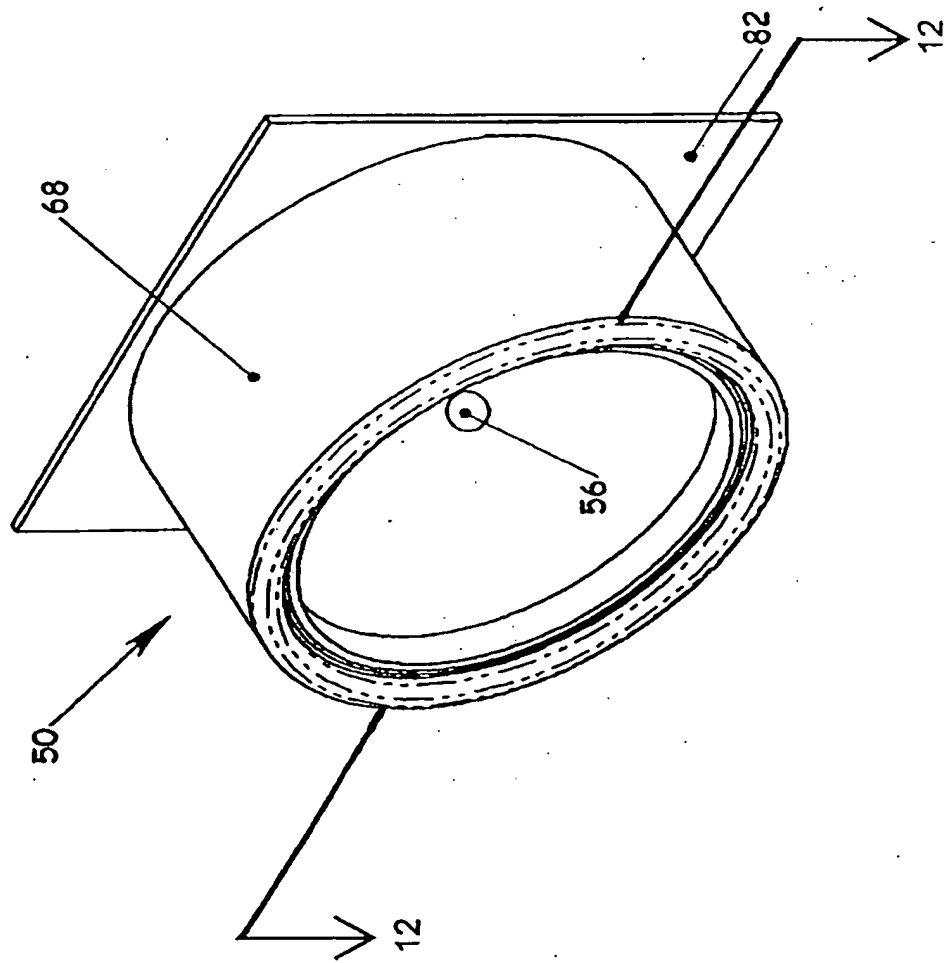


FIG.10

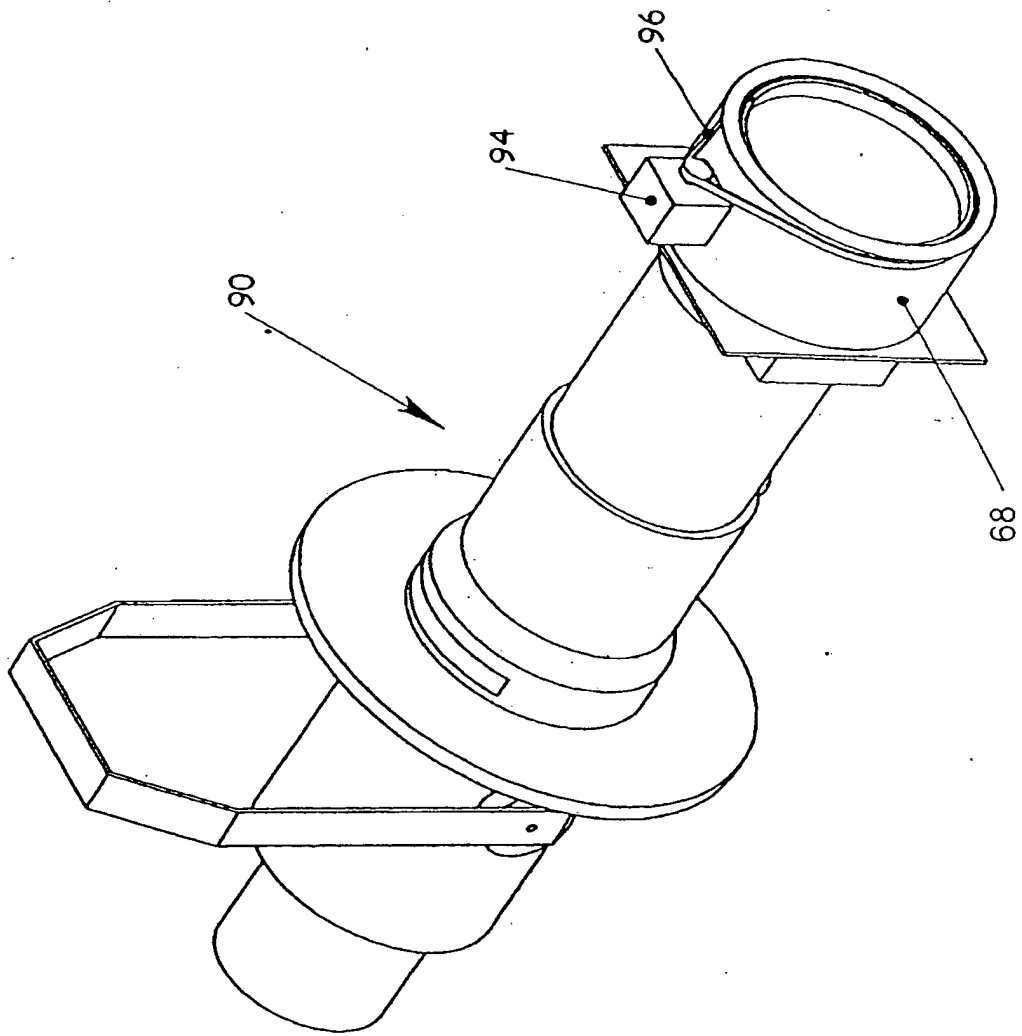


FIG.14